

GIS Intro (john hartwick, sept. 2014... based on screenshots of Erin Forward): CREATE A MAP OF CENSUS TRACTS FOR A CANADIAN CITY (CMA), DEFINED BY A QUALITY (eg. percent public transit users per census tract in Vancouver. eg. Toronto is about 1010 Census Tracts)

The process involves THREE "modules". (1) Create a "shape file" or "boundary file". (2) Create a "Data file". (Drag the data file into the shape file to create a combined single file.) (3) Create a "Census tract map" with the desired qualities per census tract with ArcMap.

Module I: Create the "Shapefile"

- 1) Queen's Library homepage. Hit "Maps and Geospatial".
- 2) hit OCUL Scholars Geoportal.
- 3) Type "Census Tracts". Hit Search.
- 4) "Census Tracts and Cartographic Boundary File, 2011 Census", Hit "Add".
- 5) Hit "I agree".
- 6) Zoom on City of interest. eg. Vancouver.
- 7) Hit "Download", upper right.
 - Select "Download by Area of Interest".
 - Select "Select a Predefined area".
 - Select "Census Metropolitan Area (CMA)" from drop down (no hit necessary).
- 8) Left click ONCE on map, pause. (Map turns pale yellow.)
 - New page appears. Pause.
 - Observe "Choose output options", "Select datasets to include". No hitting.
 - Hit "Download". Pause. Zipfile is generated and indicated at bottom.
- 9) Hit new Zipfile and open "Save". Use "Save as" to Desktop.
 - Hit "Open folder". Hit zipfile, highlighted.
 - Hit "Extract all" in upper left.
- 10) Relabel new un-zipped file, which has appeared.
 - eg.desktop\Vancouver.
 - Hit "Extract".
- 11) New unzipped file will be on Desktop.

Module II: Create the Data File

- 1) Queen's Library homepage. Type "Canadian Census Analyser". Hit Search.
- 2) Hit on "Canadian Census Analyser".
- 3) Hit "Access Now".
- 4) Hit "Census Tract".
- 5) Hit "2011 NHS (cumulative)".
- 6) Click on V (for Vancouver). Remove other checks in boxes.
 - hit also on "Vancouver"
 - hit also "Trans" (for eg. research on public transit use)
 - hit also "total workers"
 - hit also "total public transportation users"
 - move down for 4 clicks: on "province code", "CMA code", "Census tract name", "CT GNR (%)".
 - hit "columns"
 - hit "none"
 - Select (hit) "dBase (DBF) file".
 - hit "Submit Query".
- 7) DATA file is generated from "Submit Query". "Save" and "Save as" to Desktop.
- 8) On Desktop, drag datafile into Shape file.
 - We have a single file on the Desktop to work with, with ArcMap.

Module III: Mapping with ArcMap

- 1) On a Library computer, select "Microsoft and Other"
- 2) Move to "ArcMap 10.1". Pause.
- 3) Hit "OK" in lower right.
- 4) Hit "diamond and plus" icon in upper toolbar, for "add data".
- 5) Hit "rectangle and plus" icon in new toolbar and hit on the new "Vancouver" file.

Hold control key down and hit on the shape file and the data (dbf) file and hit "Add".

Map of Vancouver should appear now.
- 6) RIGHT click on shape file. Hit "open attribute Table".
- 7) Right click on data file. Hit "open".
- 8) Right click on Shape file.

Select "Joins and relates". Hit "Join".
- 9) Select "CTUID" from dropdown.

Select "COL0" (column zero) from the dropdown (3rd down of 3 "options").

Hit "OK".
- 10) Given our research is "public transit use", our data are in columns 5 and 6. Col 6 has total public transit users per census tract. We want percentages, not raw numbers. We detour into calculator mode for solve for data in col 6 divided by data in col 5.

RIGHT click on column 5 heading and select "Properties" and select "Field Calculator".
- 11) In open space that has appeared, hit on COL6 and COL5, above to get "(COL6/COL5)*100" in the new open box. Percentage values appear in COL6, now.
- 12) Right click on shape file and select "Properties". We use "General" tab now.
- 13) Rename "layer name" to "Census Tracts". DO NOT HIT OK below.
- 14) Hit "Symbology" on toolbar.

Hit "Quantities". In "Value" dropdown menu, select "COL 6".

Hit "OK".
- 15) Hit "View" in toolbar.

"Data View" allows one to move the map around in its frame and adjust zoom.
- 16) "Layout view" and then "Insert" in toolbar; then "Legend" moves map's numerical scale indicator to the map. While in "Insert" there are options to add to one's "scale indicator" that will appear on the map.
- 17) "Save as" to Desktop will give the final product, stored on the desktop.